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(56) Documents Cited

EP 0189240 A1

(58) Field of Search

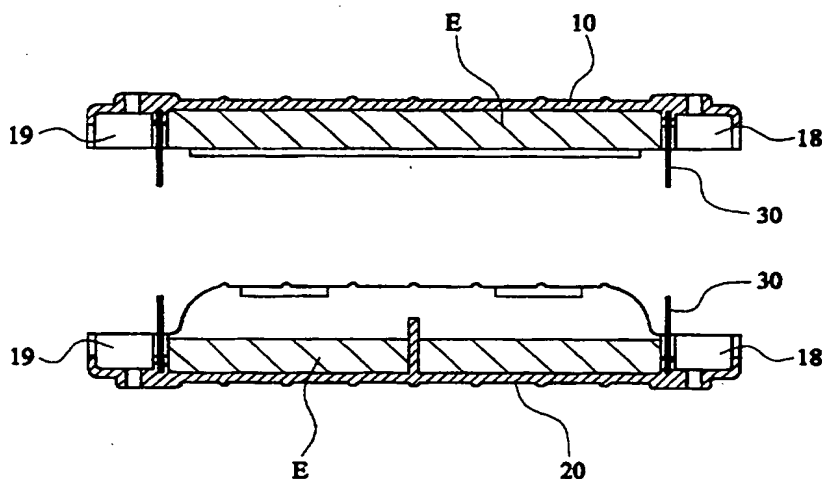
UK CL (Edition S ) H2E EFCB EGCA  
INT CL<sup>7</sup> H02G 15/013 15/10 15/113

(54) Abstract Title

**Cable closure with chambers for excess sealant**

(57) A cable closure comprises first and second parts 10,20 arranged to fit together about a cable joint. The two parts 10,20 form a main enclosure for receiving the cable joint and a chamber 18, 19 adjacent each end of the closure. The main enclosure contains a sealant composition E which is expelled into the chambers 18, 19 upon fitting the two parts of the closure together around the cable joint.

In applying a cable closure around a cable joint, the sealant composition provides a seal against the environment. Any excess composition is expelled into the chambers 18, 19, thereby avoiding contamination of the operator's hands.



**FIG. 11**

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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FIG. 1

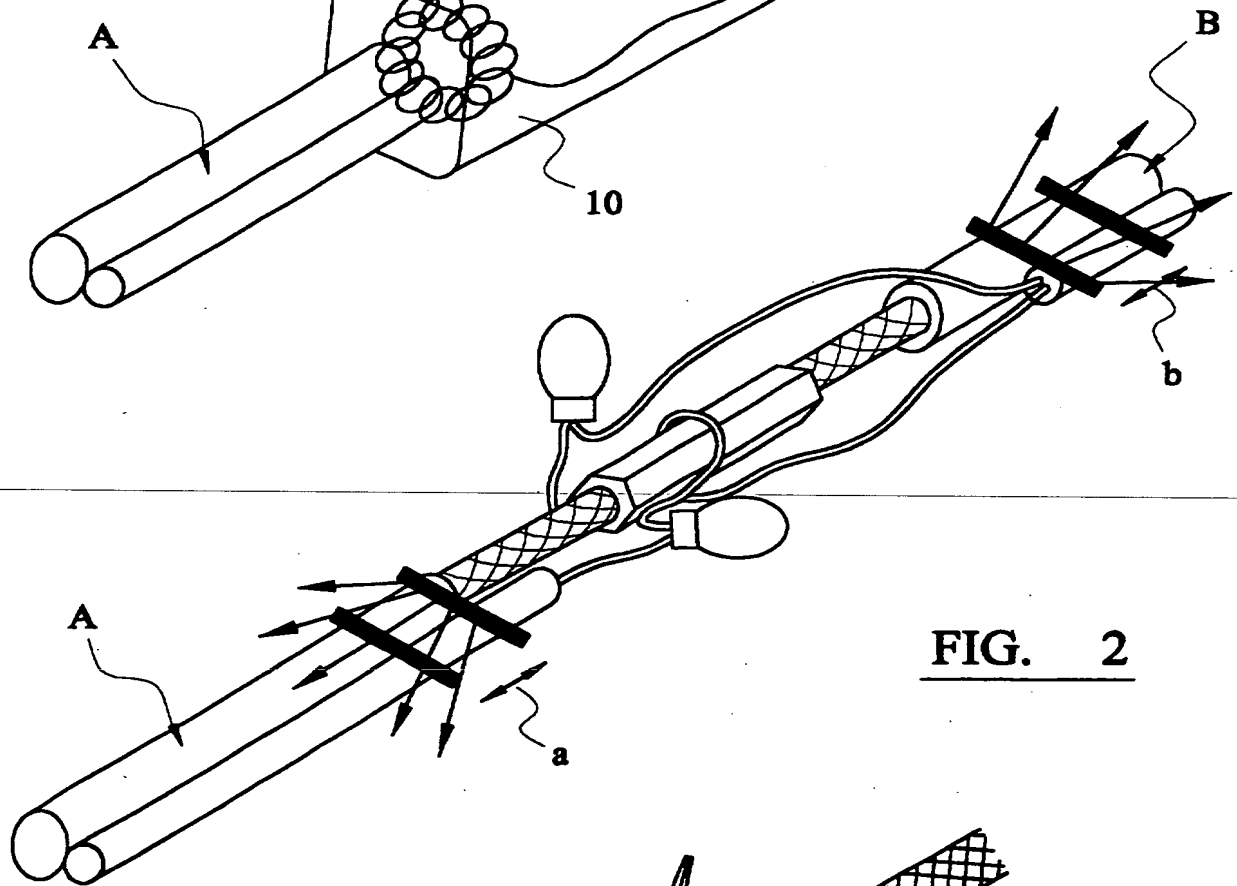
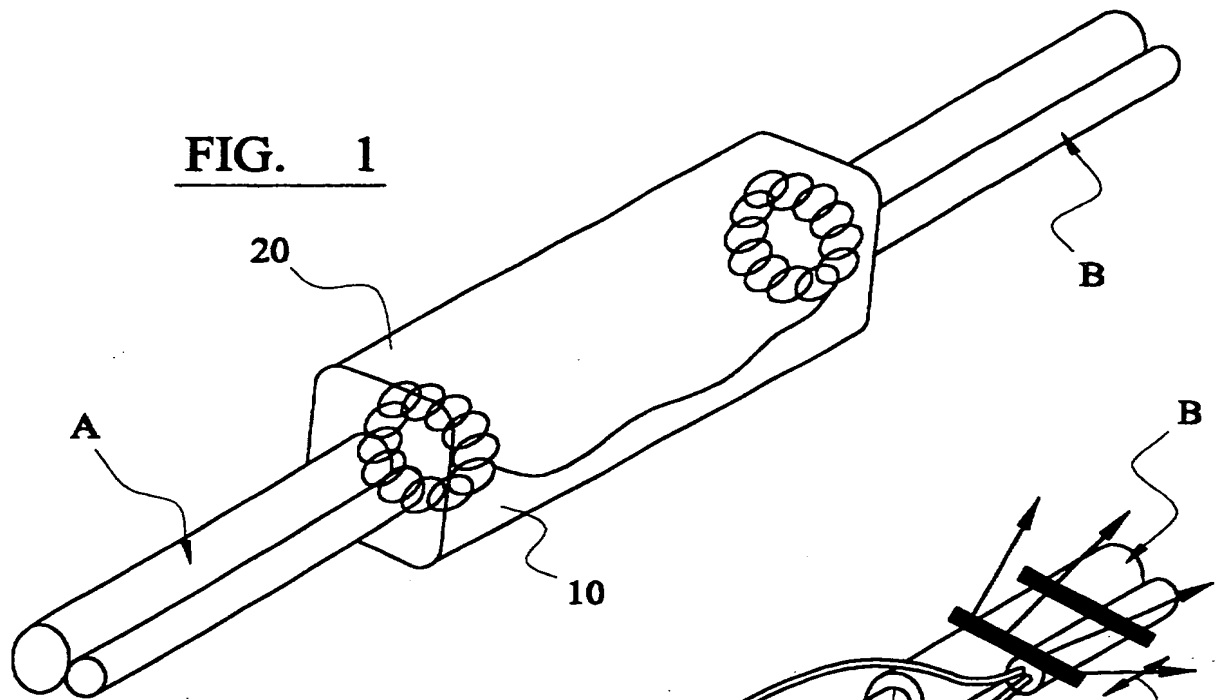


FIG. 2

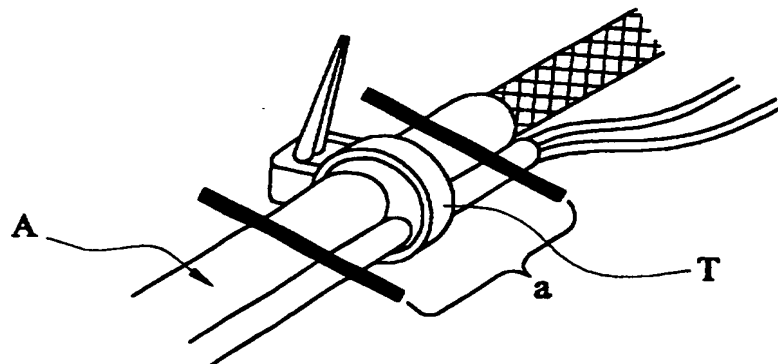


FIG. 3

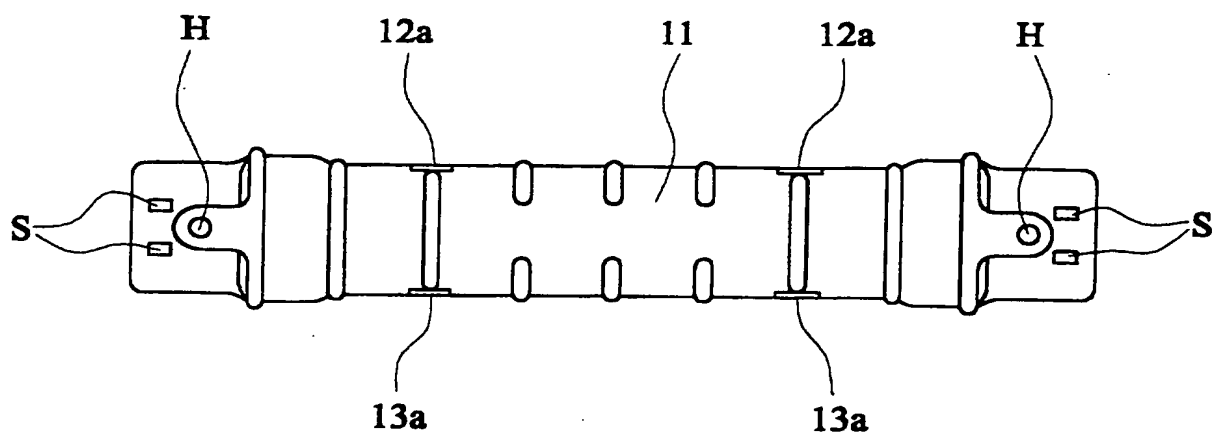


FIG. 4

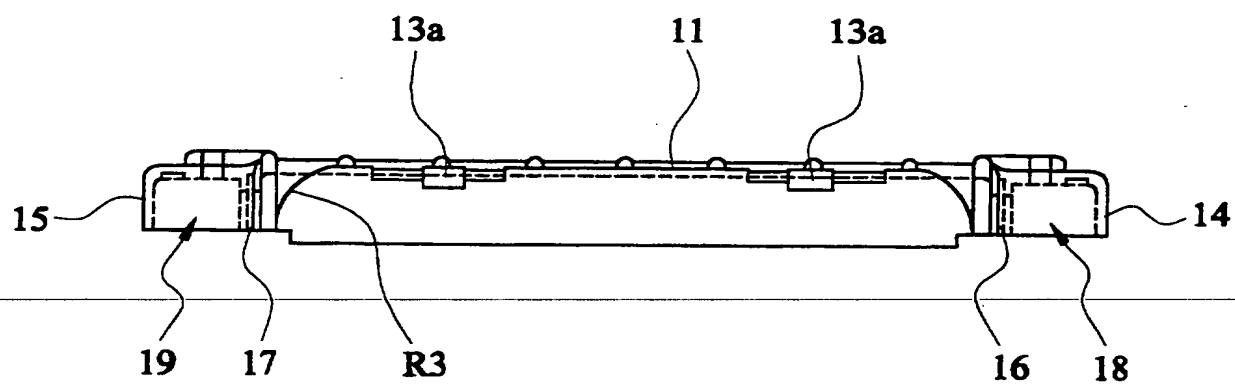
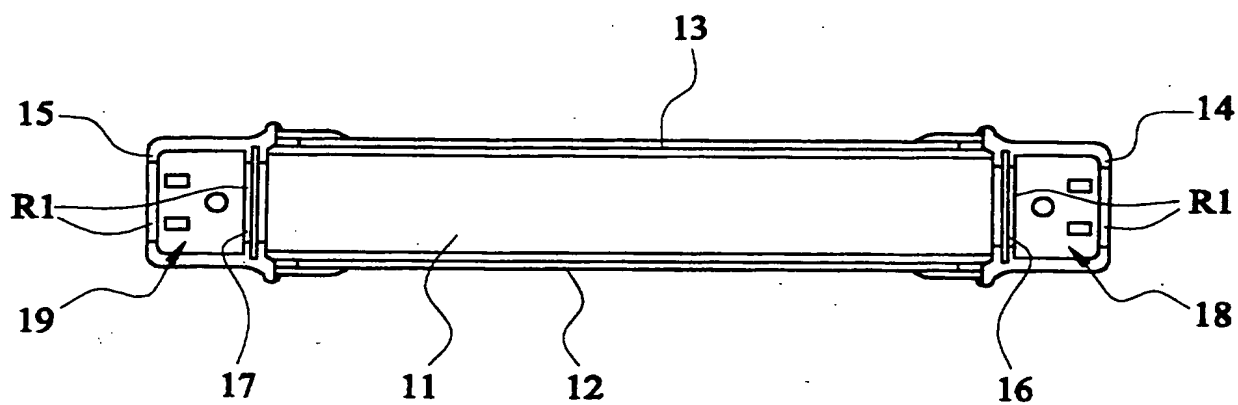


FIG. 5



**FIG. 6**

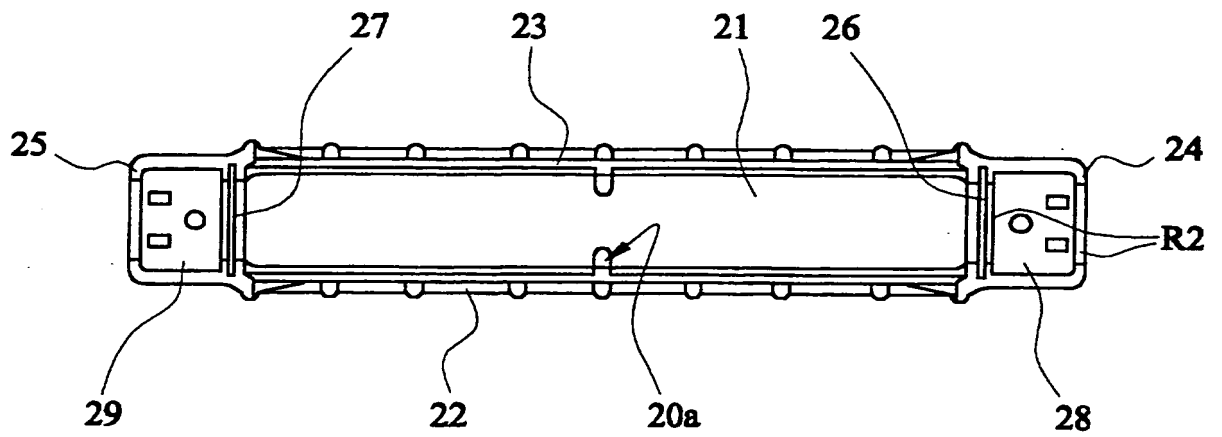


FIG. 7

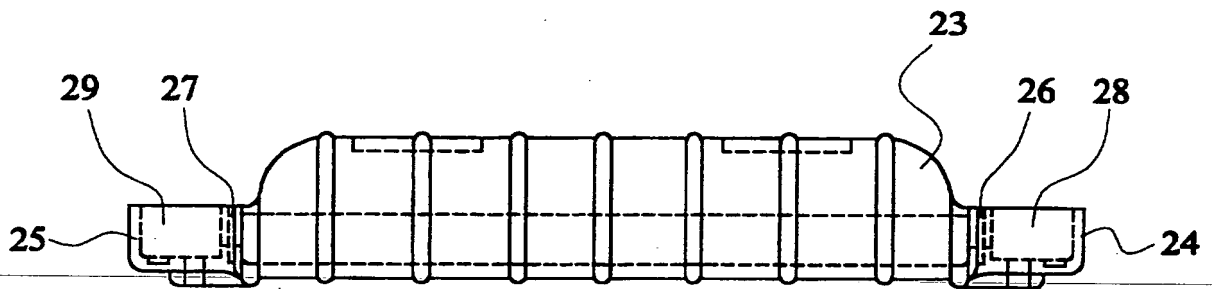


FIG. 8

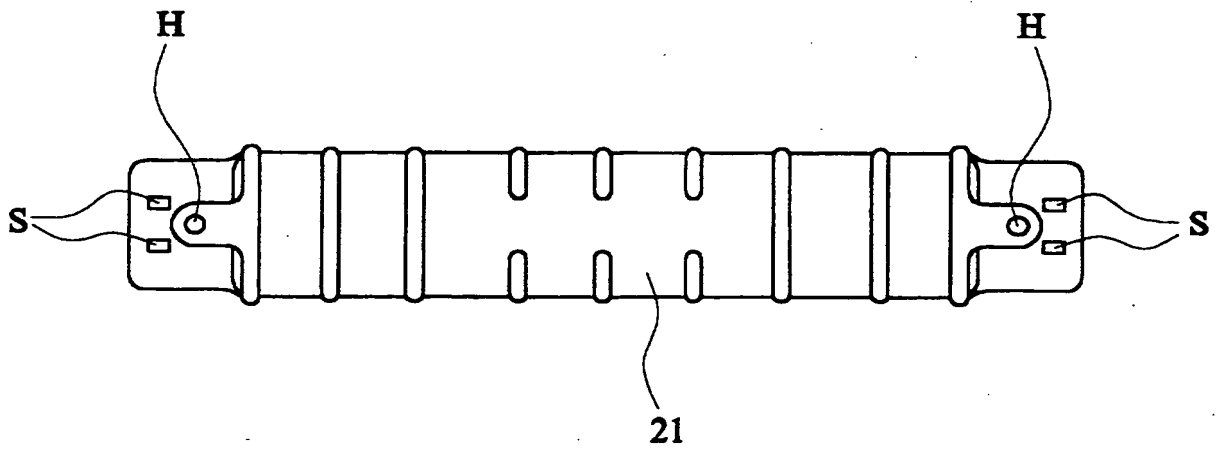


FIG. 9

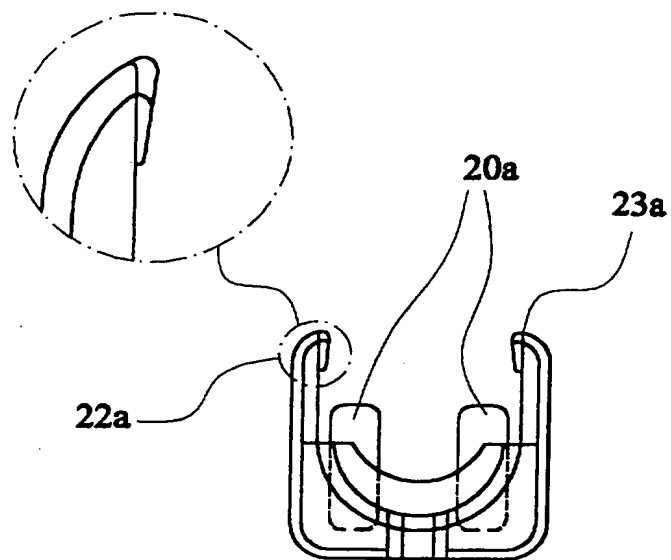


FIG. 10

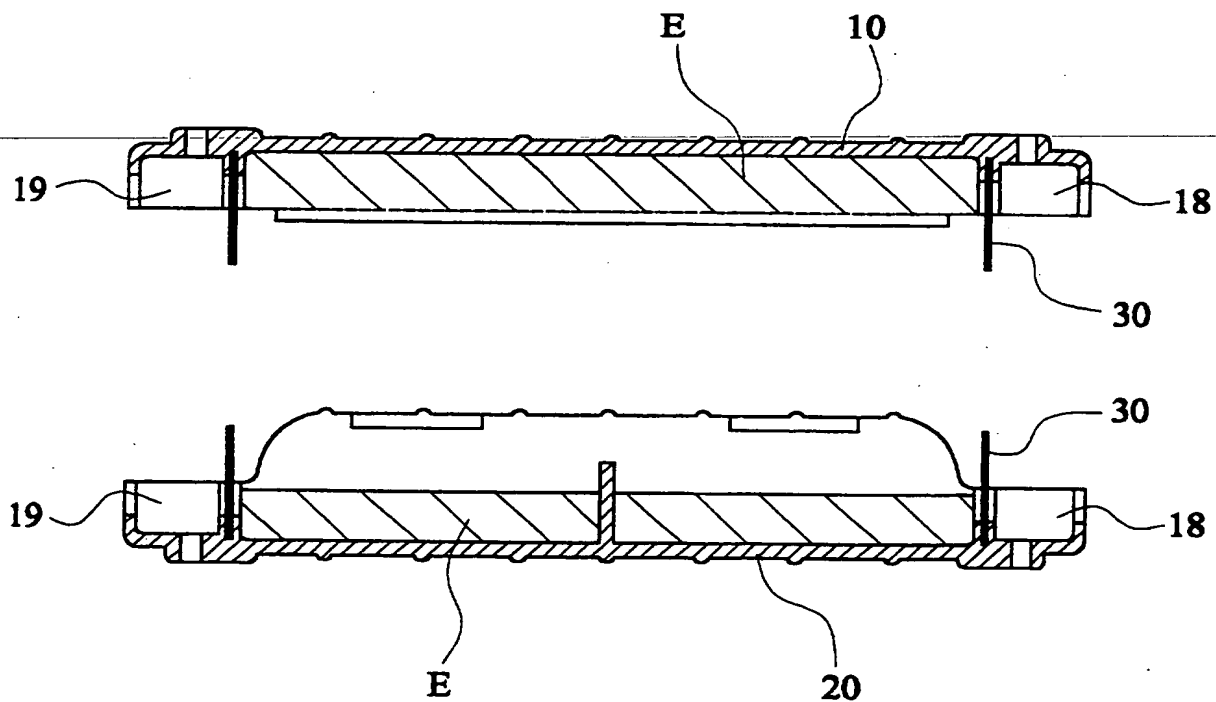


FIG. 11

Cable closure

The present invention relates to a cable closure, particularly for telecommunications cables (including coaxial cables, wire cables and optical fibre cables).

In applying a cable closure around a cable joint, it is  
5 a requirement to seal the closure against the environment. Often a gel or other sealing composition is used to provide an effective seal, but generally excess composition is expelled and contaminates the operator's hands.

We have now devised a cable closure which alleviates  
10 the problem outlined above.

In accordance with the present invention, there is provided a cable closure which comprises first and second parts arranged to fit together about a cable joint, the two parts being arranged to form a main enclosure for receiving the cable  
15 joint and a chamber adjacent at least one end of the closure, and at least one part of the closure containing a sealant composition which is expelled from the main enclosure, upon fitting the two parts of the closure together around the cable joint, to flow into said chamber.

20 Preferably each part of the closure is formed, at the or each end, with an end wall and, inwardly therefrom, with a partition wall, to define the end chamber which is to receive sealant composition as the two parts of the closure are fitted together. The end wall and partition wall are formed with  
25 recesses to accommodate the cable or bundle of cables extending through the end of the closure. As the two parts of the closure are closed together, the excess composition is forced out through the or each end of the main enclosure and into the respective end chamber.

30 Preferably the two parts of the closure are arranged to prevent the sealant composition being expelled through the sides of the closure. Preferably one part of the closure is

arranged to fit between opposed side walls of the other part, preferably as a sliding fit.

Preferably the two parts of the closure are arranged to snap-engage together.

5            Preferably the cable closure is generally rectangular in cross-section.

An embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

10            FIGURE 1 is a schematic isometric view of a cable closure of plastics material in accordance with the present invention;

FIGURE 2 is a view of the jointed cables prior to application of the closure of Figure 1;

15            FIGURE 3 is a view of a portion of one of the bundle of jointed cables;

FIGURE 4 is a view of the top of the cover part of the closure;

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20            FIGURE 5 is a side view of the cover part of the closure;

FIGURE 6 is an underside view of the cover part of the closure;

FIGURE 7 is a plan view of the base part of the closure;

25            FIGURE 8 is a side view of the base part of the closure;

FIGURE 9 is an underside view of the base part of the closure;

30            FIGURE 10 is a cross-section through the base part of the closure; and

FIGURE 11 is a longitudinal sectional view through the cover and base parts of the closure.

Referring to Figures 1 and 2 of the drawings, a closure

comprising a cover part 10 and a base part 20 is applied to enclose a joint between two bundles of cables A,B. The cover part 10 and base part 20 are pre-filled with an encapsulating composition and are applied from opposite sides of the run of  
5 cables, to interfit together: as the two parts of the closure are brought together, the encapsulating composition is forced or extruded out of the opposite ends of a main enclosure section of the closure (as indicated by the arrows in Figure 2) to flow into respective end chambers and surround the cable  
10 bundles over zones a, b. As shown in Figure 3, each bundle of cables is held together by a cable tie T in the zone in question, which is upstream of the ends of the cut-back sheaths of the cables.

Referring to Figures 4 to 6, the cover part 10 of the  
15 closure comprises a generally rectangular-section trough having a generally flat top wall 11, two depending side walls 12,13 and depending end walls 14, 15. Inwardly of the end walls 14, 15, the cover part is formed with transverse partition walls 16, 17 to form chambers 18, 19 adjacent the opposite ends of  
20 the cover part. The end walls, 14,15 and partition walls 16, 17 are formed with arcuate recesses R<sub>1</sub>, extending from their lower edges to accommodate the cables.

Referring to Figures 7 to 9 of the drawings, the base part 20 of the closure comprises a generally rectangular-  
25 section trough having a generally flat bottom wall 21, upstanding side walls 22,23 and upstanding end walls 24, 25. Inwardly of the end walls 24,25 the base part is formed with transverse partition walls 26,27 to form chambers 28,29 adjacent the opposite ends of the base part. The end walls  
30 24,25 and the partition walls 26,27 are formed with arcuate recesses R<sub>2</sub>, extending from their upper edges, to accommodate the cables.

It will be noted that the upstanding side walls 22,23



of the base part 20 are of a greater height, over the main section between the two partition walls, than over the sections between the partition walls and respective end walls. In fitting the two parts of the closure together, the cover part 5 fits between the upper portions of the side walls 22,23 of the base part, these upper portions of the side walls 22,23 of the base part engaging into complementary-shaped recesses e.g. R3 in the outer surfaces of the side walls 12, 13 of the cover part 10. When the two parts of the closure are fully engaged 10 together, the lower edges of the end walls 14,15 and partition walls 16,17 of the cover part seat onto the upper edges of the corresponding end walls 24,25 and partition walls 26,27 of the base part: also, the lower edges of the side walls 12,13 of the cover part, between the end walls 14,15 and respective 15 partition walls 16,17 seat onto the upper edges of the corresponding sections of the side walls 22,23 of the base part. The top edges of the side walls 22,23 of the base part are formed with in-turned lugs e.g. 22a,23a (see Figure 10) for engagement into recesses 12a,13a in the opposite sides of the 20 cover part 10, such that the two parts of the closure snap-engage together.

It will be noted that the top wall of the cover part and the bottom wall of the base part are formed, adjacent their ends, with slots S through which cable ties may be threaded to 25 retain the cables, and with holes H for use in mounting either part onto a wall or panel etc. One part of the closure is held in position relative to the cable joint, using cable ties passed around the cable bundles and through the corresponding slots S, before the other part of the closure is applied. In 30 the embodiment shown, the base part 20 is formed with tangs 20a for engagement by the joint connector, to position the joint centrally.

Referring to Figure 11, the section of each part of the

closure, between its partition walls, is pre-filled with a quantity E of an encapsulating composition such as a gel: each part is filled with this composition generally to a level of its end walls. A blank e.g. 30 is inserted into the recess of  
5 each partition wall, the edge of the blank engaging into a groove G in the edge of the respective recess, to contain the composition within the section between the two partition walls. The blanks are removed before the two parts of the closure are fitted together about the cable joint.

- 10 In fitting the two parts of the closure together about the cable joint, the composition will be expelled from the central, main enclosure section of the closure via the partition walls and into the end chambers: the composition is prevented from being expelled sideways by the upstanding side  
15 walls of the base part. The composition accordingly fills the main enclosure between the two partition walls avoiding the presence of voids around the joint, and sealing the ends of the main enclosure. Preferably the end chambers become filled with  
20 the cable bundles over the corresponding zones a,b with little or no composition exuding through the extreme ends of the closure.

Claims

1. A cable closure which comprises first and second parts arranged to fit together about a cable joint, the two parts being arranged to form a main enclosure for receiving the cable joint and a chamber adjacent at least one end of the closure,  
5 and at least one part of the closure containing a sealant composition which is expelled from the main enclosure, upon fitting the two parts of the closure together around the cable joint, to flow into said chamber.
- 10 2. A cable closure as claimed in claim 1, in which each part of the closure is formed, at the or each end, with an end wall and, inwardly therefrom, with a partition wall, to define the end chamber which is to receive sealant composition as the two parts of the closure are fitted together.
- 15 3. A cable closure as claimed in claim 2, in which the end wall and partition wall are formed with recesses to accommodate the cable or bundle of cables extending through the end of the closure.
4. A cable closure as claimed in any preceding claim, in  
20 which the two parts of the closure are arranged to prevent the sealant composition being expelled through the sides of the closure.
5. A cable closure as claimed in any preceding claim, in which one part of the closure is arranged to fit between  
25 opposed side walls of the other part.
6. A cable closure as claimed in any preceding claim, in which one part of the closure is arranged to fit between opposed side walls of the other part as a sliding fit.

7. A cable closure as claimed in any preceding claim, in which the two parts of the closure are arranged to snap-engage together.
8. A cable closure as claimed in any preceding claim, in  
5 which the cable closure is generally rectangular in cross-section.
9. A cable closure substantially as herein described with reference to the accompanying drawings.
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INVESTOR IN PEOPLE

Application No: GB 0000810.2  
Claims searched: 1 - 9

Examiner: Paul Nicholls  
Date of search: 11 April 2001

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK Cl (Ed.S): H2E (EGCA, EFCB)  
Int Cl (Ed.7): H02G 15/013, 15/10, 15/113  
Other:

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0,189,240 A1 (RAYCHEM) - See figure 1	1-8

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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